

ABSTRACT

A radio-frequency identification (RFID) interrogator is provided that generates pseudo-randomly selected radio frequency interrogation signals for transmission on a first antenna and receives the reflected modulated radio-frequency signals via continuous-wave backscatter from a RFID tag device through a second antenna coupled to a heterodyne receiver where data is extracted. The RFID tag device can be configured to write data as well as have data read therefrom by the interrogator. The frequency-hopping transmission in combination with the heterodyne reception provides higher power levels with substantially reduced interference, as well as the ability to link with bounced signals at certain frequencies, increasing the level of communication in the RFID system.

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